UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/594,583	05/22/2007	Masato Okano	60626.00023	6809

32294 7590 10/15/2009

SQUIRE, SANDERS & DEMPSEY L.L.P.
8000 TOWERS CRESCENT DRIVE
14TH FLOOR
VIENNA, VA 22182-6212

EXAMINER	
LAVARIAS, ARNEL C	
ART UNIT	PAPER NUMBER
2872	

MAIL DATE	DELIVERY MODE
10/15/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/594,583	OKANO, MASATO	
	Examiner	Art Unit	
	Arnel C. Lavarias	2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11/16/06,9/27/06*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27 September 2006* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *11/16/06,9/27/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The amendments to Claims 4-7 in the preliminary amendment filed 9/27/06 are acknowledged and accepted.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

3. The originally filed drawings were received on 9/27/06. These drawings are objected to for the following reason(s) as set forth below.

4. Figure 9 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

5. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet *within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited.* The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. *It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.*

6. The abstract of the disclosure is objected to because of the following reasons:

The Abstract is too long.

Abstract, line 6- delete 'is provided'

Abstract, line 18- 'form' should read 'from'

Correction is required. See MPEP § 608.01(b).

7. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

8. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification. Examples of such errors are set forth below.

9. The disclosure is objected to because of the following informalities:

Page 11, line 15- after 'set to' at the end of the line, insert 'be'.

Appropriate correction is required.

Claim Objections

10. Claims 1-7 are objected to because of the following informalities:

Claim 1 recites the limitation "the wavelength of light" in line 6. There is insufficient antecedent basis for this limitation in the claim.

Claim 1 recites the limitation "the cross-sectional figure" in line 7. There is insufficient antecedent basis for this limitation in the claim.

Claims 2-7 are dependent on Claim 1, and hence inherit the deficiencies of Claim 1.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

12. Claims 1-3, 7, as best understood, are rejected under 35 U.S.C. 102(b) as being anticipated by Tabata et al. (U.S. Patent No. 5407738).

Tabata et al. discloses a wavelength filter (See for example Abstract; Figures 1-4) comprising a grating (See for example 16 in Figures 3-4) in which a first portion (See for example void space of air between elements 16 in Figures 3-4) extending in X direction (In the instant case, defined as perpendicular to the plane of the figure in Figure 4) on a substrate surface (See for example 18 in Figures 3-4) and a second portion (See for example central portion 22 and fins 24 in Figures 3-4) composed of a material with a

refractive index higher (In the instant case, central portion 22 and fins 24 may be fabricated from materials having a refractive index in the range of 1.2-1.8; See col. 4, lines 8-37) than that of a material of the first portion and extending in the X direction along the first portion are alternately arranged in Y direction (In the instant case, defined as a horizontal axis in the plane of the figure in Figure 4) perpendicular to the X direction on the substrate surface at a predetermined cycle shorter than the wavelength of light to be used (In the instant case, the central portions 22 are spaced apart by 0.7-1.5 microns, where spacings near 0.7 microns are less than operational wavelengths greater than 0.7 microns, as shown in Figures 5-23, 26-29, which all show significant reflectances beyond 0.7 microns; See also col. 3, lines 49-55), wherein the wavelength filter is constituted so that the cross-sectional figure of respective first portions in the Y direction and perpendicular to the substrate surface is provided with at least one protruding portion (See for example void space of air between fins 24 in Figures 3-4) so as to become wider in the width of Y direction than that of neighboring portions within a predetermined range of distance apart from the substrate surface by a predetermined distance in Z direction (In the instant case, defined as a vertical axis in the plane of the figure in Figure 4) to form plural waveguide layers parallel to the substrate surface and divided by regions parallel to the substrate surface in the predetermined range of distance, and that wavelength bands of light reflected from the plural waveguide layers shift while overlapping with each other to reflect light with a wavelength band broader than that of light reflected from a single waveguide layer (See for example Figures 26-29, where typical production errors in fabrication tend to broaden the reflectance curves over that

which has little to no production errors). Tabata et al. further disclose the wavelength bands of light reflected from the plural waveguide layers shift while overlapping with each other by altering the predetermined range of distance (See for example Figures 5-10, which show increasing number of fin elements 24, which alters the predetermined range of distance. Locations of reflection peaks are seen to shift with increasing numbers of fin elements 24); the wavelength bands of light reflected from the plural waveguide layers shift while overlapping with each other by altering average refractive index of the plural waveguide layers (See for example Figures 11-15, which show increasing refractive index of central portion 22 and fin elements 24, which alters the predetermined range of distance. Locations of reflection peaks are seen to shift with increasing refractive index of central portion 22 and fin elements 24); and the wavelength filter is produced by the step of plotting the cross-sectional figure by irradiating a beam from the X direction (It is noted that this limitation is a Product-by-Process recitation. As per MPEP 2113: "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir.1985)". Thus, this limitation has not been given significant patentable weight.).

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

14. Claims 4-6, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Tabata et al.

Tabata et al. discloses the invention as set forth above in Claim 1, except for the material of the first portion being any of glass, plastic or silicon; or the material of the second portion being any of titanium oxide, magnesium fluoride, silicon oxide, germanium, or zinc selenide. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the material of the first portion be any of glass, plastic or silicon; and the material of the second portion be any of titanium oxide, magnesium fluoride, silicon oxide, germanium, or zinc selenide, since it has been held to be within the ordinary skill of worker in the art to select a known material on the basis of its suitability for the intended use. One would have been motivated to have the material of the first portion be any of glass, plastic or silicon; or the material of the second portion be any of titanium oxide, magnesium fluoride, silicon oxide, germanium, or zinc selenide, for the purpose of adjusting the reflectance strength and reflectance wavelength(s) of the wavelength filter by utilizing a different material, which imparts a different refractive index to either the first portion and/or the second

portion, based on the intended application. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945).

Conclusion

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arnel C. Lavarias whose telephone number is 571-272-2315. The examiner can normally be reached on M-F 10:00 AM - 6:30 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephone B. Allen can be reached on 571-272-2434. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Arnel C. Lavarias
Primary Examiner
Group Art Unit 2872
10/9/09

/Arnel C. Lavarias/
Primary Examiner, Art Unit 2872